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- ## 12722 | The cell growth inhibitory effect of an aqueous extract of Tuberaria lignosa in NCI-H460 human tumor cells

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Tuberaria lignosa (Sweet) Samp. is found in European regions. This plant has antioxidant properties due to its composition in ascorbic acid and phenolic compounds [1]. Given its antioxidant properties and its large traditional use, the aim of this work was to study the tumor cell growth inhibitory potential of aqueous extracts from T. lignosa (prepared by infusion and decoction).
Cell growth was accessed by the Sulforhodamine B (SRB) assay in three human tumor cell lines: MCF-7 (breast adenocarcinoma), NCI-H460 (non-small cell lung cancer), and HCT-15 (human colorectal adenocarcinoma). Both extracts inhibited the growth of the cell lines tested. The most potent extract was the T. lignosa extract obtained by infusion, in the NCI-H460 cells (presenting a GI50 of approximately 50 µg/mL).
Further assays were carried out with two different concentrations of this extract in the NCI-H460 cells. The determination of its effect on the cell cycle profile was carried out by analyzing cellular DNA content by flow cytometry following incubation with propidium iodide. Determination of cellular apoptosis was performed with the Annexin V-FICT and propidium iodide assay, by flow cytometry. The expression of apoptotic proteins was carried out by Western Blot. Results showed that 100 µg/mL or 150 µg/mL of extract caused an increase in the percentage of cells in the G0/G1 phase and a decrease of cells in S phase of the cell cycle. In addition, the extract caused an increase in the percentage of apoptotic cells, with a decrease in total poly (ADP-ribose) polymerase (PARP) and pro-caspase 3 levels.
In conclusion, the T. lignosa extract obtained by infusion was more potent in NCI-H460 cells, altering the cell cycle progression and inducing apoptosis.

1. Pinela, J., et al., Antioxidant activity, ascorbic acid, phenolic compounds and sugars of wild and commercial Tuberaria lignosa samples: effects of drying and oral preparation methods. Food Chem, 2012. 135(3): p. 1028-35.